

**Statistics Report 09004, Apples, raw, without skin**
**Report Date: May 22, 2017 01:38 EDT**

Nutrient values and weights are for edible portion.

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
<b>Proximates</b>													
Water <a href="#">1</a> <a href="#">2</a>	g	86.67	--	0.110	85.37	88.06	1.0	85.27	88.072	2	Analytical or derived from analytical	--	09/2002
Energy	kcal	48	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
Energy	kJ	200	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
Protein <a href="#">1</a>	g	0.27	--	0.051	0.22	0.37	1.0	-0.379	0.928	1	Analytical or derived from analytical	--	09/2002
Total lipid (fat) <a href="#">1</a> <a href="#">2</a>	g	0.13	--	0.021	0.07	0.22	1.0	-0.038	0.291	2	Analytical or derived from analytical	--	09/2002
Ash <a href="#">1</a>	g	0.17	--	0.028	0.13	0.21	1.0	-0.15	0.493	1	Analytical or derived from analytical	--	09/2002
Carbohydrate, by difference	g	12.76	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
Fiber, total dietary <a href="#">1</a>	g	1.3	--	0.090	1.1	1.5	1.0	0.382	2.181	1	Analytical or derived from analytical	--	09/2002
Sugars, total <a href="#">1</a>	g	10.10	--	1.059	8.88	11.9	1.0	-3.154	23.346	1	Analytical or derived from analytical	--	09/2002

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Sucrose <a href="#">1</a>	g	0.82	--	0.109	0.58	1.11	1.0	-0.212	1.843	1	Analytical or derived from analytical	--	09/2002
Glucose (dextrose) <a href="#">1</a>	g	3.25	--	0.546	2.22	4.45	1.0	-3.666	10.166	1	Analytical or derived from analytical	--	09/2002
Fructose <a href="#">1</a>	g	6.03	--	0.409	5.41	6.57	1.0	1.141	10.92	1	Analytical or derived from analytical	--	09/2002
Lactose <a href="#">1</a>	g	0.00	--	0.000	0	0	--	--	--	1	Analytical or derived from analytical	--	09/2002
Maltose <a href="#">1</a>	g	0.00	--	0.000	0	0	--	--	--	1	Analytical or derived from analytical	--	09/2002
Galactose <a href="#">1</a>	g	0.00	--	0.000	0	0	--	--	--	1	Analytical or derived from analytical	--	09/2002
<b>Minerals</b>													
Calcium, Ca <a href="#">1</a>	mg	5	--	0.678	4	9	1.0	-0.89	10.919	1	Analytical or derived from analytical	--	09/2002
Iron, Fe	mg	0.07	163	0.004	--	--	--	--	--	--	Analytical or derived from analytical	--	08/1982
Magnesium, Mg <a href="#">1</a>	mg	4	--	0.280	4	6	1.0	2.292	6.271	1	Analytical or derived from analytical	--	09/2002
Phosphorus, P <a href="#">1</a>	mg	11	--	0.811	10	13	1.0	1.802	21.139	1	Analytical or derived from analytical	--	09/2002

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Potassium, K <a href="#">1</a>	mg	90	--	7.728	80	102	1.0	9.132	171.078	1	Analytical or derived from analytical	--	09/2002
Sodium, Na	mg	0	85	0.025	--	--	--	--	--	--	Analytical or derived from analytical	--	08/1982
Zinc, Zn <a href="#">1</a>	mg	0.05	--	0.009	0.04	0.09	1.0	-0.004	0.105	1	Analytical or derived from analytical	--	09/2002
Copper, Cu	mg	0.031	164	0.001	--	--	--	--	--	--	Analytical or derived from analytical	--	08/1982
Manganese, Mn <a href="#">1</a>	mg	0.038	--	0.005	0.03	0.07	2.0	0.014	0.062	1	Analytical or derived from analytical	--	09/2002
Selenium, Se	µg	0.0	--	--	--	--	--	--	--	--	Calculated or imputed	09003	09/2002
<b>Vitamins</b>													
Vitamin C, total ascorbic acid	mg	4.0	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	08/1982
Thiamin <a href="#">1</a>	mg	0.019	--	0.002	0.02	0.02	1.0	-0.009	0.046	1	Analytical or derived from analytical	--	09/2002
Riboflavin <a href="#">1</a>	mg	0.028	--	0.008	0.01	0.04	1.0	-0.068	0.123	1	Analytical or derived from analytical	--	09/2002
Niacin	mg	0.091	--	0.018	--	--	--	--	--	--	Analytical or derived from analytical	--	08/1982

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Pantothenic acid <a href="#">↓</a>	mg	0.071	--	0.005	0.06	0.09	1.0	0.02	0.121	1	Analytical or derived from analytical	--	09/2002
Vitamin B-6 <a href="#">↓</a>	mg	0.037	--	0.004	0.03	0.04	1.0	-0.007	0.082	1	Analytical or derived from analytical	--	09/2002
Folate, total	µg	0	--	0.056	--	--	--	--	--	--	Analytical or derived from analytical	--	08/1982
Folic acid	µg	0	--	--	--	--	--	--	--	--	Assumed zero	--	01/2001
Folate, food	µg	0	--	0.056	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
Folate, DFE	µg	0	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
Choline, total	mg	3.4	--	--	--	--	--	--	--	--	Calculated or imputed	09003	12/2006
Vitamin B-12	µg	0.00	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
Vitamin B-12, added	µg	0.00	--	--	--	--	--	--	--	--	Assumed zero	--	09/2004
Vitamin A, RAE <a href="#">↓</a>	µg	2	--	0.058	1	2	1.0	1.364	2.486	1	Analytical or derived from analytical	--	09/2002
Retinol	µg	0	--	--	--	--	--	--	--	--	Assumed zero	--	06/2002
Carotene, beta <a href="#">↓</a>	µg	17	--	0.900	11	18	1.0	5.364	28.236	1	Analytical or derived from analytical	--	09/2002
Carotene, alpha <a href="#">↓</a>	µg	0	--	0.000	0	0	--	--	--	1	Analytical or derived from analytical	--	09/2002

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Cryptoxanthin, beta <a href="#">1</a>	µg	13	--	0.570	9	14	2.0	9.999	15.201	1	Analytical or derived from analytical	--	09/2002
Vitamin A, IU <a href="#">1</a>	IU	38	--	1.162	28	42	1.0	27.277	49.723	1	Analytical or derived from analytical	--	09/2002
Lycopene <a href="#">1</a>	µg	0	--	0.000	0	0	--	--	--	1	Analytical or derived from analytical	--	09/2002
Lutein + zeaxanthin <a href="#">1</a>	µg	18	--	0.300	14	19	1.0	13.988	21.612	1	Analytical or derived from analytical	--	09/2002
Vitamin E (alpha-tocopherol) <a href="#">2</a>	mg	0.05	--	--	0	0.09	1.0	--	--	1	Analytical or derived from analytical	--	09/2002
Vitamin E, added	mg	0.00	--	--	--	--	--	--	--	--	Assumed zero	--	09/2004
Tocopherol, beta <a href="#">2</a>	mg	0.01	--	--	0	0.01	1.0	--	--	1	Analytical or derived from analytical	--	09/2002
Tocopherol, gamma <a href="#">2</a>	mg	0.00	--	--	0	0	1.0	--	--	1	Analytical or derived from analytical	--	09/2002
Tocopherol, delta <a href="#">2</a>	mg	0.00	--	--	0	0	1.0	--	--	1	Analytical or derived from analytical	--	09/2002
Vitamin D (D2 + D3)	µg	0.0	--	--	--	--	--	--	--	--	Assumed zero	--	11/2008
Vitamin D	IU	0	--	--	--	--	--	--	--	--	Assumed zero	--	02/2009

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Vitamin K (phylloquinone) <a href="#">1</a>	µg	0.6	--	0.045	0.4	0.7	1.0	0.013	1.157	1	Analytical or derived from analytical	--	09/2002
<b>Lipids</b>													
Fatty acids, total saturated	g	0.021	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
4:0	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
6:0	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
8:0	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
10:0	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
12:0	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
14:0	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
16:0	g	0.017	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
18:0	g	0.002	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
Fatty acids, total monounsaturated	g	0.005	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
16:1 undifferentiated	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
18:1 undifferentiated	g	0.005	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
20:1	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
22:1 undifferentiated	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
Fatty acids, total polyunsaturated	g	0.037	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
18:2 undifferentiated	g	0.031	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
18:3 undifferentiated	g	0.007	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
18:4	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
20:4 undifferentiated	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
20:5 n-3 (EPA)	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
22:5 n-3 (DPA)	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
22:6 n-3 (DHA)	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
Fatty acids, total trans	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	06/2015
Cholesterol	mg	0	--	--	--	--	--	--	--	--	Assumed zero	--	08/1982
<b>Amino Acids</b>													
Tryptophan <a href="#">3</a>	g	0.001	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Threonine <a href="#">3</a>	g	0.006	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Isoleucine <a href="#">3</a>	g	0.006	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Leucine <a href="#">3</a>	g	0.014	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Lysine <a href="#">3</a>	g	0.013	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Methionine <a href="#">3</a>	g	0.001	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Cystine <a href="#">3</a>	g	0.001	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Phenylalanine <a href="#">3</a>	g	0.007	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Tyrosine <a href="#">3</a>	g	0.001	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Valine <a href="#">3</a>	g	0.012	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Arginine <a href="#">3</a>	g	0.006	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Histidine <a href="#">3</a>	g	0.005	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Alanine <a href="#">3</a>	g	0.012	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Aspartic acid <a href="#">3</a>	g	0.074	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Glutamic acid <a href="#">3</a>	g	0.026	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Glycine	g	0.009	--	--	--	--	--	--	--	--	Calculated or imputed	09003	09/2002
Proline <a href="#">3</a>	g	0.006	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Serine <a href="#">3</a>	g	0.011	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
<b>Other</b>													
Alcohol, ethyl	g	0.0	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
Caffeine	mg	0	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002
Theobromine	mg	0	--	--	--	--	--	--	--	--	Assumed zero	--	09/2002

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
<b>Flavonoids</b>													
Anthocyanidins													
Cyanidin <a href="#">7</a> <a href="#">8</a>	mg	2.17	--	1.34	0.6	8.9	--	--	--	--	--	--	--
Petunidin <a href="#">8</a>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
Delphinidin <a href="#">7</a> <a href="#">8</a>	mg	0.0	--	0	0	0.02	--	--	--	--	--	--	--
Malvidin <a href="#">8</a>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
Pelargonidin <a href="#">7</a> <a href="#">8</a>	mg	0.0	--	0	0	0.02	--	--	--	--	--	--	--
Peonidin <a href="#">8</a>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
Flavan-3-ols													
(+)-Catechin <a href="#">8</a> <a href="#">9</a> <a href="#">10</a>	mg	1.2	--	0.17	0	5.52	--	--	--	--	--	--	--
(-)-Epigallocatechin <a href="#">8</a> <a href="#">9</a>	mg	0.1	--	0.08	0	1.52	--	--	--	--	--	--	--
(-)-Epicatechin <a href="#">8</a> <a href="#">9</a> <a href="#">10</a> <a href="#">11</a>	mg	6.2	--	0.6	0	14.23	--	--	--	--	--	--	--
(-)-Epicatechin 3-gallate <a href="#">8</a> <a href="#">9</a>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
(-)-Epigallocatechin 3-gallate <a href="#">8</a> <a href="#">9</a>	mg	0.0	--	0.02	0	0.48	--	--	--	--	--	--	--
(+)-Gallocatechin <a href="#">8</a> <a href="#">9</a>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
Flavanones													
Hesperetin <a href="#">8</a>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
Naringenin <a href="#">8</a>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
Flavones													
Apigenin <a href="#">7</a> <a href="#">8</a>	mg	0.0	--	0	0	0.01	--	--	--	--	--	--	--
Luteolin <a href="#">7</a> <a href="#">8</a>	mg	0.0	--	0	0	0.02	--	--	--	--	--	--	--
Flavonols													
Kaempferol <a href="#">7</a>	mg	0.0	--	0	0.01	0.01	--	--	--	--	--	--	--
Myricetin <a href="#">7</a> <a href="#">8</a>	mg	0.0	--	0	0	0.03	--	--	--	--	--	--	--
Quercetin <a href="#">7</a> <a href="#">8</a> <a href="#">10</a> <a href="#">11</a> <a href="#">12</a> <a href="#">13</a>	mg	1.1	--	0.16	0	2	--	--	--	--	--	--	--
Isoflavones													
Daidzein <a href="#">14</a>	mg	0.00	--	0	0	0	--	--	--	--	--	--	--
Genistein <a href="#">14</a>	mg	0.00	--	0	0	0	--	--	--	--	--	--	--
Total isoflavones <a href="#">14</a>	mg	0.00	--	0	0	0	--	--	--	--	--	--	--
Proanthocyanidin													
Proanthocyanidin dimers <a href="#">4</a> <a href="#">5</a> <a href="#">6</a>	mg	12.3	--	12.37	0	79.55	--	--	--	--	--	--	--
Proanthocyanidin trimers <a href="#">5</a>	mg	6.5	--	1.03	5.44	7.88	--	--	--	--	--	--	--
Proanthocyanidin 4-6mers <a href="#">5</a>	mg	22.8	--	3.07	19.31	26.71	--	--	--	--	--	--	--
Proanthocyanidin 7-10mers <a href="#">5</a>	mg	18.9	--	3.04	15.27	22.51	--	--	--	--	--	--	--
Proanthocyanidin polymers (>10mers) <a href="#">5</a>	mg	25.6	--	6.39	18.39	33.75	--	--	--	--	--	--	--

**Sources of Data**

<sup>1</sup>Nutrient Data Laboratory, ARS, USDA National Food and Nutrient Analysis Program Wave 5j, 2001 Beltsville MD  
<sup>2</sup>Nutrient Data Laboratory, ARS, USDA Determination of the Tocopherol Content of Selected Foods, 1992 Beltsville MD  
<sup>3</sup>Nutrient Data Laboratory, ARS, USDA National Food and Nutrient Analysis Program Wave 5b, 2000 Beltsville MD

<sup>4</sup>Burda, S., Oleszek, W., and Lee, C.Y. **Phenolic compounds and their changes in apples during maturation and cold storage**, 1990 J. Agric. Food Chem. 38 pp.945-948

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<sup>7</sup>Franke, A.A., Custer, L.J., Arakaki, C., and Murphy, S.P. **Vitamin C and flavonoid levels of fruits and vegetables consumed in Hawaii**, 2004 J. Food Comp. Anal. 17 pp.1-35

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<sup>11</sup>Burda, S., Oleszek, W., and Lee, C. Y. **Phenolic compounds and their changes in apples during maturation and cold storage.**, 1990 J. Agric. Food Chem. 38 pp.945-948

<sup>12</sup>Justesen, U., Knuthsen, P., and Leth, T. **Quantitative analysis of flavonols, flavones, and flavonones in fruits, vegetables and beverages by high-performance liquid chromatography with photo-diode array and mass spectrometric detection.**, 1998 J. Chromatogr. A 799 pp.101-110

<sup>13</sup>van der Sluis, A.A., Dekker, M., de Jager, A., and Jongen, W.M.F. **Activity and concentration of polyphenolic antioxidants in apple: Effect of cultivar, harvest year, and storage conditions.**, 2001 J. Agric. Food Chem. 49 8 pp.3606-3613

<sup>14</sup>Liggins, J., Bluck, L. J. C., Runswick, S., Atkinson, C., Coward, W. A., Bingham, S. A. **Daidzein and genistein content of fruits and nuts.**, 2000 J. Nutr. Biochem. 11 pp.326-331